IE-Giga-MiniMc

Operation Manual

FCC Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a Class A computing device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which the user will be required to correct the interference at his own expense.

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

The use of non-shielded I/O cables may not guarantee compliance with FCC RFI limits. This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par le ministère des Communications du Canada.

Warranty

IMC Networks warrants to the original end-user purchaser that this product, EXCLUSIVE OF SOFTWARE, shall be free from defects in materials and workmanship under normal and proper use in accordance with IMC Networks' instructions and directions for a period of six (6) years after the original date of purchase. This warranty is subject to the limitations set forth below.

At its option, IMC Networks will repair or replace at no charge the product which proves to be defective within such warranty period. This limited warranty shall not apply if the IMC Networks product has been damaged by unreasonable use, accident, negligence, service or modification by anyone other than an authorized IMC Networks Service Technician or by any other causes unrelated to defective materials or workmanship. Any replaced or repaired products or parts carry a ninety (90) day warranty or the remainder of the initial warranty period, whichever is longer.

To receive in-warranty service, the defective product must be received at IMC Networks no later than the end of the warranty period. The product must be accompanied by proof of purchase, satisfactory to IMC Networks, denoting product serial number and purchase date, a written description of the defect and a Return Merchandise Authorization (RMA) number issued by IMC Networks. No products will be accepted by IMC Networks which do not have an RMA number. For an RMA number, contact IMC Networks at PHONE: (800) 624-1070 (in the U.S and Canada) or (949) 465-3000 or FAX: (949) 465-3020. The end-user shall return the defective product to IMC Networks, freight, customs and handling charges prepaid. End-user agrees to accept all liability for loss of or damages to the returned product during shipment. IMC Networks shall repair or replace the returned product, at its option, and return the repaired or new product to the end-user, freight prepaid, via method to be determined by IMC Networks. IMC Networks shall not be liable for any costs of procurement of substitute goods, loss of profits, or any incidental, consequential, and/or special damages of any kind resulting from a breach of any applicable express or implied warranty, breach of any obligation arising from breach of warranty, or otherwise with respect to the manufacture and sale of any IMC Networks product, whether or not IMC Networks has been advised of the possibility of such loss or damage.

EXCEPT FOR THE EXPRESS WARRANTY SET FORTH ABOVE, IMC NETWORKS MAKES NO OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, WITH RESPECT TO THIS IMC NETWORKS PRODUCT, INCLUDING WITHOUT LIMITATION ANY SOFTWARE ASSOCIATED OR INCLUDED. IMC NETWORKS SHALL DISREGARD AND NOT BE BOUND BY ANY REPRESENTATIONS OR WARRANTIES MADE BY ANY OTHER PERSON, INCLUDING EMPLOYEES, DISTRIBUTORS, RESELLERS OR DEALERS OF IMC NETWORKS, WHICH ARE

INCONSISTENT WITH THE WARRANTY SET FORTH ABOVE. ALL IMPLIED WARRANTIES INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY LIMITED TO THE DURATION OF THE EXPRESS WARRANTY STATED ABOVE.

Every reasonable effort has been made to ensure that IMC Networks product manuals and promotional materials accurately describe IMC Networks product specifications and capabilities at the time of publication. However, because of ongoing improvements and updating of IMC Networks products, IMC Networks cannot guarantee the accuracy of printed materials after the date of publication and disclaims liability for changes, errors or omissions.

Table of Contents

FCC Radio Frequency Interference Statement ii
Warranty ii
About the IE-Giga-MiniMc 1
Led Operation 2
DC Power Supply Precautions 4
Specifications 5
IMC Networks Technical Support 6
Fiber Optic Cleaning Guidelines 7
Electrostatic Discharge Precautions 7
Safety Certifications 8

About the IE-Giga-MiniMc

The IE-Giga-MiniMc is a 10/100/1000 Auto Negotiating switching miniature media converter. The fiber port always operates at 1000 Mbps Full Duplex; the copper port Auto Negotiates the connected device's speed and duplex mode: 10/100/1000 Mbps Half Duplex; or 10 /100/1000 Mbps Full Duplex (including Flow Control). The IE-Giga-MiniMc supports jumbo packets up to 1632 bytes.

The IE represents the unit's use as an Industrial Ethernet device, which allows for extended temperature operation of -35° to 70° C (0°C to 50°C when using the included AC adapter).

The IE-Giga-MiniMc converter offers plug-and-play operation, including the AutoCross feature which automatically selects between a crossover workstation and straight-through repeater hub connection depending on the connected device.

The IE-Giga-MiniMc can use either the included IMC Networks universal, external power adapter with 100 to 240 ±10% V AC input or can be wired directly to the 7-50 V DC terminal block (for extended temperature configuration). There is an optional IE-PowerTray/18 in which up to 18 IE-Giga-MiniMcs can be installed.

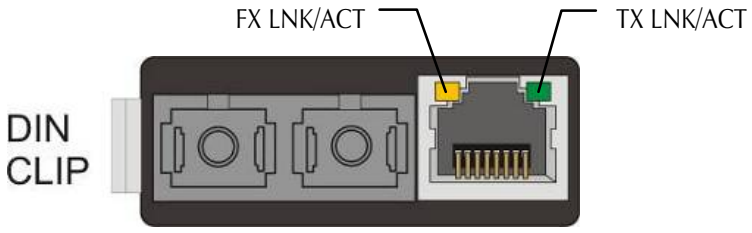
Installing the IE-Giga-MiniMc

IE-Giga-MiniMc installs virtually anywhere: as a standalone, table-top device, on a DIN rail, or an IMC Networks PowerTray/18. As a standalone device, the end user can install IE-Giga-MiniMc in locations with extremely limited space. Also included are Velcro strips to attach the device to most surfaces.

Installation Tip
Several models of the IE-Giga-MiniMc support single-strand fiber for operation. Since single-strand fiber products use optics that transmit and receive on two different wavelengths, single-strand fiber products must be deployed in pairs. For example, connect an IE-Giga-MiniMc, TX/SSLX-SM1310-SC (which has 1310 xmt and 1550 rcv) to a product which has 1550 xmt and 1310 rcv, e.g. iMcV-Gigabit, TX/SSLX-SM1550-SC. The two connected products must also have the same speed and distance capabilities (i.e. both are single-mode [20km] or both are single/PLUS [40km]).

LED Operation

Each IE-Giga-MiniMc converter includes two LEDs, located on the RJ-45 connector. LED functions are as follows



FX LNK/ACT Glows green when a link is established on the fiber port; blinks green when activity is detected on the fiber port.

TX LNK/ACT Glows amber when a link is established on the copper port; blinks amber when activity is detected on the copper port.

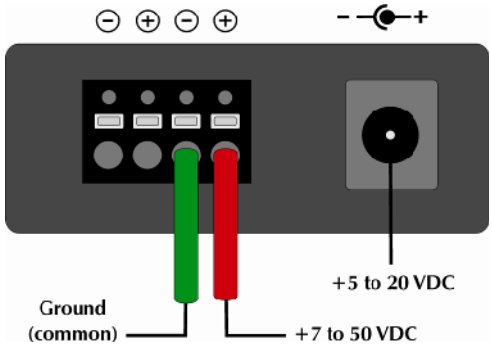
Powering the IE-Giga-MiniMc

IE-Giga-MiniMc supports three powering options.

- A country-specific AC power adapter (included)
- The 4-terminal DC power block
- IE-PowerTray/18

DC Terminal Block Wiring Instructions

The IE-Giga-MiniMc can be powered via the DC terminal block. From a power source, connect to any one positive and any one negative terminal on IE-Giga-MiniMc.



Connected to Chassis

NOTE
When using stranded wire, the leads must be tinned, and equivalent to a 16 AWG solid conductor. The IE-Giga-MiniMc is protected against mis-wiring; if mis-wired the IE-Giga-MiniMc will not function. The IE-Giga-MiniMc is internally connected to the negative DC power terminals.

Cascading Power

When installing multiple IE-Giga-MiniMc units on a DIN rail, connect to one DC input source and then cascade from one DC block to the next, until reaching the maximum electrical current available.

DIN Rail Mounting

The IE-Giga-MiniMc ships from the factory with DIN c a DIN rail. The IE-Giga-MiniMc mounts perpendicular t

Use the supplied screws to attach the DIN clips to the IE-Giga-MiniMc, then snap the converter to the DIN rail.

To remove the converter from the DIN rail, use a flat-head screwdriver in the slot to gently pry the converter from the rail.

NOTE
The DIN clips are designed for use on a DIN-35 rail.

DC Power Supply Precautions

The following precautions should be observed when installing chassis with DC power supplies.

1. Check nameplate ratings to assure there is no overloading of supply circuits that could have an effect on overcurrent protection and supply wiring.
2. When installing 7 – 50V DC rated equipment, it must be installed only per the following conditions:
    a. Connect the equipment to a 7 – 50V DC supply source that is electrically isolated form the alternating current source. The 7 – 50V DC source must be connected to a 7 – 50V DC SELV source.
    b. The maximum terminal voltage is 50V DC.
    c. Input wiring to terminal block must be routed and secured in such a manner that it is protected from damage and stress. Do not route wiring past sharp edges or moving parts.
    d. A readily accessible disconnect device, with a 3mm minimum contact gap, shall be incorporated in the fixed wiring.
3. Grounding: reliable grounding of this equipment must be maintained. Particular attention should be given to supply connections when connecting to power strips, rather than direct connections to the branch circuit. The Negative Terminal is common to the grounded case.

Specifications

Fiber Connections

Multi-mode 1300nm Dual Fiber
Single-mode 1310nm 1550nm Dual Fiber
Single-mode 1310nm 1490nm Single-Strand Fiber
Single-mode 1310nm 1550nm Single-Strand Fiber

Ethernet Connections

- 10/100/1000 BaseT
- Auto Negotiation
- AutoCross
- Flow Control
- 1632 MTU
- Full Line-Rate Forwarding

DC Input Voltage

7 to 50 V DC on DC terminal block
5 V DC on DC jack

AC Wall Adapter

100 to 240 ±10% V AC input, 5 V DC output, 2 A max

Power Tray 18-Slot AC for Miniature Converters

125W, 20A@5V

Power Consumption

600 mA

Operating Temperature

-31° to 158° F (-35° to 70° C) DC terminal block
32° to 122° F (0° to 50° C) with IMC supplied AC wall adapter

Storage Temperature

-31° to 167° F (-35° to 75° C)

Humidity

5 to 95% (non-condensing); 0 to 10,000 ft. altitude

Dimensions

0.83″H x 1.80″W x 3.35″D (2.11 x 4.57 x 8.51 cm)

IMC Networks Technical Support

Tel: (949) 465-3000 or (800) 624-1070 (in the U.S. and Canada);

+32-16-550880 (Europe)

Fax: (949) 465-3020

E-Mail: techsupport@imcnetworks.com

Web: www.imcnetworks.com

Fiber Optic Cleaning Guidelines

Fiber Optic transmitters and receivers are extremely susceptible to contamination by particles of dirt or dust, which can obstruct the optic path and cause performance degradation. Good system performance requires clean optics and connector ferrules.

1. Use fiber patch cords (or connectors, if you terminate your own fiber) only from a reputable supplier; low-quality components can cause many hard-to-diagnose problems in an installation.
2. Dust caps are installed at IMC Networks to ensure factory-clean optical devices. These protective caps should not be removed until the moment of connecting the fiber cable to the device. Should it be necessary to disconnect the fiber device, reinstall the protective dust caps.
3. Store spare caps in a dust-free environment such as a sealed plastic bag or box so that when reinstalled they do not introduce any contamination to the optics.
4. If you suspect that the optics have been contaminated, alternate between blasting with clean, dry, compressed air and flushing with methanol to remove particles of dirt.

Electrostatic Discharge Precautions

Electrostatic discharge (ESD) can cause damage to any product, add-in modules or stand alone units, containing electronic components. Always observe the following precautions when installing or handling these kinds of products

1. Do not remove unit from its protective packaging until ready to install.
2. Wear an ESD wrist grounding strap before handling any module or component. If the wrist strap is not available, maintain grounded contact with the system unit throughout any procedure requiring ESD protection.
3. Hold the units by the edges; do not touch the electronic components or gold connectors.
4. After removal, always place the boards on a grounded, static-free surface, ESD pad or in a proper ESD bag. Do not slide the modules or stand alone units over any surface.

WARNING! Integrated circuits and fiber optic components are extremely susceptible to electrostatic discharge damage. Do not handle these components directly unless you are a qualified service technician and use tools and techniques that conform to accepted industry practices.

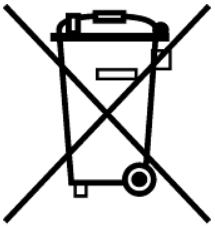
Safety Certifications

UL/CUL: Listed to Safety of Information Technology Equipment, including Electrical Business Equipment.

CE: The products described herein comply with the Council Directive on Electromagnetic Compatibility (2004/108/EC) and the Council Directive on Electrical Equipment Designed for use within Certain Voltage Limits (2006/95/EC). Certified to Safety of Information Technology Equipment, Including Electrical Business Equipment. For further details, contact IMC Networks.

Class 1 Laser product, Luokan 1 Laserlaite,
Laser Klasse 1, Appareil A'Laser de Classe 1

European Directive 2002/96/EC (WEEE) requires that any equipment that bears this symbol on product or packaging must not be disposed of with unsorted municipal waste. This symbol indicates that the equipment should be disposed of separately from regular household waste. It is the consumer's responsibility to dispose of this and all equipment so marked through designated collection facilities appointed by government or local authorities. Following these steps through proper disposal and recycling will help prevent potential negative consequences to the environment and human health. For more detailed information about proper disposal, please contact local authorities, waste disposal services, or the point of purchase for this equipment.



19772 Pauling • Foothill Ranch, CA 92610-2611 USA
TEL: (949) 465-3000 • FAX: (949) 465-3020
www.imcnetworks.com

ISO 9001:2000 REGISTERED

RoHS

Made in USA

© 2009 IMC Networks. All rights reserved.

The information in this document is subject to change without notice. IMC Networks assumes no responsibility for any errors that may appear in this document. IE-Giga-MiniMc is a trademark of IMC Networks. Other brands or product names may be trademarks and are the property of their respective companies.

Document Number 56-80830-00 A4 **October 2009**